

In response, the Applicant submits that these expressions are commonly understood by a person of ordinary skill in the art. In particular, the meanings of each one of these terms, as understood by a person of ordinary skill in the art, are as follows:

- (a) "undersize particle fraction": is that fraction of the dry agglomerates which is too fine to be used in the solid lubricant agglomerate;
- (b) "desired particle size fraction": is that fraction of the dry agglomerates which will be used as the solid lubricant agglomerate after being stabilized at high temperatures.
- (c) "oversize particle fraction": is that fraction of the dry agglomerates which is too coarse to be used in the solid lubricant agglomerate.

In support of this position, the Applicant hereby submits and refers to the Declaration of Karel Hajmrlé attached hereto as Appendix "A".

Since it has been demonstrated that these terms are well understood by a person of ordinary skill in the art, the Applicant submits that the claims including these terms are sufficiently definite, and respectfully requests withdrawal of this rejection.

2. Rejection of Claims 27-29, 37-44, 45, 47, 54-61, 63, 67-69, and 71-75 under 35 U.S.C. 103

- (a) Rejection of Claims 27-29 and 37-43

Claim 27 defines the following invention:

A method for producing solid lubricant agglomerates comprising:

admixing a plurality of components comprising particulate solid lubricant, an inorganic binder, and a liquid to produce a mixture having about 5 to 60 weight % solids based on the total weight of the mixture, wherein the ratio of the weight of the solid lubricant being admixed to the weight of the binder being admixed is from about 19:1 to about 1:19;

drying the mixture to produce dry agglomerates; and

classifying the dry agglomerates by size, or milling and classifying the dry agglomerates by size, into an undersize particle fraction, a desired particle size fraction and an oversize particle fraction;

wherein the plurality of components further comprises the undersize particle fraction.

The Examiner rejects Claim 27 as being unpatentable over Heath '586 in view of Dorfman '182.

In response, the Applicant submits that, unlike each one of Heath '586 and Dorfman '182, Claim 27 recites a method for producing solid lubricant agglomerates comprising, amongst other things, admixing a plurality of components, wherein the plurality of components includes the undersize particle fraction resulting from the classification of dry agglomerates.

Since neither Heath '586 nor Dorfman '182 discloses this element of the claimed method, Claim 27 is patentable over the cited references.

With respect to Claims 29 and 37-43, each one of these claims is directly or indirectly dependent on Claim 27. As such, and relying on the foregoing reasons with respect to Claim 27, the Applicant further submits that Claims 29 and 37-43 are patentable over the cited references.

(b) Rejection of Claims 44, 45, 47, and 54-56

Claim 44 defines the following invention:

A method for producing solid lubricant agglomerates comprising:

admixing a plurality of components comprising a particulate solid lubricant, an inorganic binder, and a liquid to produce a mixture having about 5 to 60 weight % solids based on the total weight of the mixture, wherein the ratio of the weight of the solid lubricant being admixed to the weight of the binder being admixed is from about 19:1 to about 1:19;

drying the mixture to produce dry agglomerates;

classifying the dry agglomerates by size, or milling and classifying the dry agglomerates by size, to obtain a desired particle size cut; and

causing the binder in the desired particle size cut to become non-dispersible in the liquid.

The Examiner rejects Claim 44 as being unpatentable over Heath '586 in view of Dorfman '182. In particular, the Examiner relies on Dorfman '182 for disclosing the use of bentonite as a binder in a spray composition, and that such bentonite binder is inherently non-dispersible.

In response, the Applicant submits that Dorfman '182 does not disclose using bentonite as a binder. Rather, the binder in the composition disclosed in Dorfman '182 is an organic binder (see column 3, lines 39-47). In order to function as a binder in the spray composition of the claimed invention, whether the binder is organic or inorganic, the binder must be dispersible in water so that the binder can effectively coat the surface of the solid lubricant particles (see attached Hajmrle Declaration). In the case of the organic binder in Dorfman '182, the organic binder is characteristically dispersible in water when introduced into

the water to form an aqueous slurry including metallic powders. The aqueous slurry of Dorfman '182 is then spray dried to form an agglomerated composite powder, and the binder remain dispersible in water even after the spray drying. If, as would be done in the case of a dried agglomerate including bentonite binder in order to stabilize the bentonite binder (and render the bentonite binder non-dispersible in water), the Dorfman '182 agglomerated composite powder is heated to relatively high temperatures (eg. 850 degrees Celsius), the organic binder of the Dorfman '182 agglomerated composite powder would be burnt off from the composite powder.

The Applicant further submits with respect to Dorfman '182 that, even though Dorfman '182 does disclose adding bentonite during the making of the agglomerated composite powder, the bentonite is provided for the purpose of functioning as a non-metal (see column 1, lines 60-63) - ie. as a raw material that plays the role of a softener in the abrasible coating, and does not function as a binder. Without the non-metal, the abrasible coating would be almost pure metal, ie. hard and not abrasible. With the non-metal in the coating, the coating's tensile strength, for instance, is lowered, and the coating is, thereby, rendered abrasible (see Hajmrie Declaration).

Moreover, the bentonite contemplated for use by Dorfman '182 is a species of calcined siliceous clay (see column 2, lines 47 to 50), and the calcined form of bentonite is not suitable for use as a binder due to the fact that the calcined form of bentonite is non-dispersible in water. During calcination of bentonite (ie. raw, uncalcined bentonite), chemically bound water from raw bentonite escapes from the raw bentonite to form calcined bentonite. The structure of the calcined bentonite is different from the structure of the raw bentonite. The raw bentonite is in the form of fine platelets which can coat the surface of solid lubricant particles when introduced into an aqueous slurry of the solid lubricant particles. During calcination, the platelets sinter together to form a mass of particles which can no longer be dispersed in water. (see attached Hajmrie Declaration).

Even though Dorfman '182 discloses the use of the bentonite, the Applicant fails to see how there is anything inherent within Dorfman '182 about using bentonite as a binder, and even then rendering such binder to be non-dispersible in water. The Applicant respectfully submits that the Examiner is required to provide rationale or evidence tending to show inherency (see MPEP 2112). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

Since Dorfman '182 does not disclose a method of producing a spray composition including the rendering of a binder to be non-dispersible after the drying of a produced agglomerate including the binder, the Applicant submits that Claim 44 is patentable over the cited references.

With respect to Claims 45, 47, and 54-56, each one of these claims is directly or indirectly dependent on Claim 44. As such, and relying on the foregoing reasons with respect to Claim 44, the Applicant further submits that Claims 45, 47, and 54-56 are patentable over the cited references.

(c) Rejection of Claims 57-61, 63, 67-69, and 71

Claim 57 defines the following invention:

A method for producing solid lubricant agglomerates comprising:

admixing a plurality of components comprising a particulate solid lubricant, an inorganic binder, and a liquid to produce a mixture having about 5 to 60 weight % solids based on the total weight of the mixture, wherein the ratio of the weight of the solid lubricant being admixed to the weight of the binder being admixed is from about 19:1 to about 1:19; and

drying the mixture to produce dry agglomerates.

wherein the binder is hydrous aluminium silicate that is configured to be stabilized at temperatures above 850°C in the dry agglomerates.

The Examiner rejects Claim 57 as being unpatentable over Heath '586 in view of Dorfman '182. In particular, the Examiner relies on Dorfman '182 for disclosing the use of bentonite as a binder in a spray composition.

In response, the Applicant submits that Dorfman '182 does not disclose using bentonite as a binder. Rather, the binder in the composition disclosed in Dorfman '182 is an organic binder (see column 3, lines 39-47).

The Applicant further submits with respect to Dorfman '182 that, even though Dorfman '182 does disclose adding bentonite during the making of the agglomerated composite powder, the bentonite is provided for the purpose of functioning as a non-metal (see column 1, lines 60-63), - ie. as a raw material that plays the role of a softener in the abrasible coating, and does not function as a binder. Without the non-metal, the abrasible coating would be almost pure metal, ie. hard and not abrasible. With the non-metal in the coating, the coating's tensile strength, for instance, is lowered, and the coating is, thereby, rendered abrasible (see attached Hajmle Declaration).

Moreover, the bentonite contemplated for use by Dorfman '182 is a species of calcined siliceous clay (see column 2, lines 47 to 50), and the calcined form of bentonite is not suitable for use as a binder due to the fact that the calcined form of bentonite is non-dispersible in water. In order to function as a binder in the spray composition of the claimed invention, the bentonite must be dispersible in water so that the bentonite can effectively coat the surface of the solid lubricant particles. During calcination of bentonite (ie. raw, uncalcined bentonite), chemically bound water from raw bentonite escapes from the raw bentonite to form calcined bentonite. The structure of the calcined bentonite is different from

the structure of the raw bentonite. The raw bentonite is in the form of fine platelets which can coat the surface of solid lubricant particles when introduced into an aqueous slurry of the solid lubricant particles. During calcination, the platelets sinter together to form a mass of particles which can no longer be dispersed in water (see attached Hajmrle Declaration).

Since Dorfman '182 does not disclose using bentonite as a binder, the Applicant submits that Claim 57 is patentable over the cited references.

With respect to Claims 58-61, 63, 67-69, and 71, each one of these claims is directly or indirectly dependent on Claim 57. As such, and relying on the foregoing reasons with respect to Claim 44, the Applicant further submits that Claims 58-61, 63, 67-69, and 71 are patentable over the cited references.

(d) Rejection of Claims 72-75

Claim 72 depends on any one of Claims 27-52 and 54-71.

The Applicant has submitted, above, that Claim 27 is patentable over the cited references. Claims 28-43 and 70 are directly or indirectly dependent on Claim 27. As such, and relying on the foregoing reasons with respect to Claim 27, the Applicant further submits that Claims 28-43 and 70 are patentable over the cited references.

The Applicant has also submitted, above, that Claim 44 is patentable over the cited references. Claims 45-52, 54-56, and 71 are directly or indirectly dependent on Claim 44. As such, and relying on the foregoing reasons with respect to Claim 44, the Applicant further submits that Claims 45-52, 54-56, and 71 are patentable over the cited references.

The Applicant has also submitted, above, that Claim 57 is patentable over the cited references. Claims 58-69 are directly or indirectly dependent on Claim 57. As such, and relying on the foregoing reasons with respect to Claim 57, the

Applicant further submits that Claims 58-69 are patentable over the cited references.

In summary, the Applicant has now submitted that Claims 27-52 and 54-71 are patentable over the cited references. As stated above, Claim 72 depends on any one of Claims 27-52 and 54-56. As such, and relying on the foregoing reasons, the Applicant further submits that Claim 72 is patentable over the cited references.

With respect to Claims 73-75, each one of these claims is directly or indirectly dependent on Claim 72. As such, and relying on the foregoing reasons with respect to Claim 72, the Applicant further submits that Claims 73-75 are patentable over the cited references.

3. Rejection of Claims 27, 28, 30-32, 34, 40-44, 46, 47, 48, 50, 57, 62, 64-66, 70, 72, 74, and 75 under 35 U.S.C. 103

(a) Rejection of Claims 27, 28, 30-32, 34, and 40-43

Claim 27 is defined as set out above.

The Examiner rejects Claim 27 as being unpatentable over Brown '337 in view of Dorfman '055. As well, the Examiner also appears to reject Claim 27 as being unpatentable over Brown '337 in view of Dorfman '182.

In response, the Applicant submits that, unlike each one of Brown '337, Dorfman '055, and Dorfman '182, Claim 27 recites a method for producing solid lubricant agglomerates comprising, amongst other things, admixing a plurality of components, wherein the plurality of components includes the undersize particle fraction resulting from the classification of dry agglomerates.

Since none of Brown '337, Dorfman '055, and Dorfman '182 discloses this element of the claimed method, Claim 27 is patentable over the cited references.

With respect to Claims 27, 28, 30-32, 34, and 40-43, each one of these claims is directly or indirectly dependent on Claim 27. As such, and relying on the foregoing reasons with respect to Claim 27, the Applicant further submits that Claims 27, 28, 30-32, 34, and 40-43 are patentable over the cited references.

(b) Rejection of Claims 44, 46, 47, 48, and 50

Claim 44 is defined as set out above.

The Examiner rejects Claim 44 as being unpatentable over Brown '337 in view of Dorfman '055. As well, the Examiner also appears to reject Claim 44 as being unpatentable over Brown '337 in view of Dorfman '182. In particular, the Examiner relies on Dorfman '055 as disclosing "fractions" which would be inherently non-dispersible in the original liquid. As well, the Examiner relies on Dorfman '182 for disclosing non-dispersible binders.

With respect to Dorfman '055, the Applicant submits that the binder used in the Dorfman '055 thermal spray powder is a polymeric binder (see column 2, lines 60-61, and also column 3, lines 27-30), and is not bentonite. In order to function as a binder in the spray composition of the claimed invention, whether the binder is organic or inorganic, the binder must be dispersible in water so that the binder can effectively coat the surface of the solid lubricant particles (see attached Hajmrle Declaration). In the case of the organic binder in Dorfman '182, the organic binder is characteristically dispersible in water when introduced into the water to form an aqueous slurry including metallic powders. The aqueous slurry of Dorfman '182 is then spray dried to form an agglomerated composite powder, and the binder remain dispersible in water even after the spray drying. If, as would be done in the case of a dried agglomerate including bentonite binder in order to stabilize the bentonite binder (and render the bentonite binder non-dispersible in water), the Dorfman '182 agglomerated composite powder is heated to relatively high temperatures (eg. 850 degrees Celsius), the organic

binder of the Dorfman '182 agglomerated composite powder would be burnt off from the composite powder.

With respect to Dorfman '182, the Applicant submits that Dorfman '182 does not disclose using bentonite as a binder. Rather, the binder in the composition disclosed in Dorfman '182 is an organic binder (see column 3, lines 39-47). In order to function as a binder in the spray composition of the claimed invention, whether the binder is organic or inorganic, the binder must be dispersible in water so that the binder can effectively coat the surface of the solid lubricant particles (see attached Hajmrle Declaration). In the case of the organic binder in Dorfman '182, the organic binder is characteristically dispersible in water when introduced into the aqueous slurry including metallic powders. The aqueous slurry of Dorfman '182 is then spray dried to form an agglomerated composite powder, and the binder remain dispersible in water even after the spray drying. If, as would be done in the case of a dried agglomerate including bentonite binder in order to stabilize the bentonite binder (and, therefore, render the bentonite binder non-dispersible in water), the Dorfman '182 agglomerated composite powder is heated to relatively high temperatures (eg. 850 degrees Celsius), the organic binder of the Dorfman '182 agglomerated composite powder would be burnt off from the composite powder.

The Applicant further submits with respect to Dorfman '182 that, even though Dorfman '182 does disclose adding bentonite during the making of the agglomerated composite powder, the bentonite is provided for the purpose of functioning as a non-metal (see column 1, lines 60-63) - ie. as a raw material that plays the role of a softener in the abradable coating, and does not function as a binder. Without the non-metal, the abradable coating would be almost pure metal, ie. hard and not abradable. With the non-metal in the coating, the coating's tensile strength, for instance, is lowered, and the coating is, thereby, rendered abradable (see Hajmrle Declaration).

Moreover, the bentonite contemplated for use by Dorfman '182 is a species of calcined siliceous clay (see column 2, lines 47 to 50), and the calcined form of bentonite is not suitable for use as a binder due to the fact that the calcined form of bentonite is non-dispersible in water. During calcination of bentonite (ie. raw, uncalcined bentonite), chemically bound water from raw bentonite escapes from the raw bentonite to form calcined bentonite. The structure of the calcined bentonite is different from the structure of the raw bentonite. The raw bentonite is in the form of fine platelets which can coat the surface of solid lubricant particles when introduced into an aqueous slurry of the solid lubricant particles. During calcination, the platelets sinter together to form a mass of particles which can no longer be dispersed in water (see Hajmrle Declaration).

With respect to each one of Dorfman '055 and Dorfman '182, the Applicant additionally notes that neither of these two references explicitly discloses that each one of their respective processes renders a respective binder to be non-dispersible in water, and that the Examiner is relying upon inherent teaching of this aspect by these references. **The Applicant fails to see how there is anything inherent within Dorfman '055 or Dorfman '182 about the binder being rendered non-dispersible. The Applicant respectfully submits that the Examiner is required to provide rationale or evidence tending to show inherency (see MPEP 2112). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).**

Since neither of Dorfman '055 or Dorfman '182 discloses a method of producing a spray composition including the rendering of a binder to be non-dispersible after the drying of a produced agglomerate including the binder, the Applicant submits that Claim 57 is patentable over the cited references.

With respect to Claims 46, 47, 48, and 50, since each one of these claims is directly or indirectly dependent on Claim 44, and relying on the foregoing reasons with respect to Claim 44, the Applicant further submits that Claims 46, 47, 48, and 50 are patentable over the cited references.

(c) Rejection of Claims 57, 62, 64-66, and 70

Claim 57 is defined as set out above.

The Examiner rejects Claim 57 as being unpatentable over Brown '337 in view of Dorfman '055. As well, the Examiner also appears to reject Claim 44 as being unpatentable over Brown '337 in view of Dorfman '182. In particular, the Examiner appears to only rely on Dorfman '182 for disclosing bentonite functioning as a binder.

With respect to Dorfman '055, the Applicant submits that the binder used in the Dorfman '055 thermal spray powder is a polymeric binder (see column 2, lines 60-61, and also column 3, lines 27-30), and is not bentonite.

With respect to Dorfman '182, the Applicant submits that Dorfman '182 does not disclose using bentonite as a binder. Rather, the binder in the composition disclosed in Dorfman '182 is an organic binder, and the organic binder is not rendered non-dispersible by any heat treatment after drying. Dorfman '182 does disclose using bentonite as part of the method of making its composition but, again, the bentonite does not function as a binder and, importantly, the bentonite is already stabilized prior to being admixed with an intermediate composition during the method of making the Dorfman '182 composition and cannot, therefore, function as a binder. The bentonite is provided for the purpose of functioning as a non-metal (see column 1, lines 60-63) - ie. as a raw material that plays the role of a softener in the abradable coating, and does not function as a binder. Without the non-metal, the abradable coating would be almost pure metal, ie. hard and not abradable. With the non-metal in the coating, the

coating's tensile strength, for instance, is lowered, and the coating is, thereby, rendered abradable (see Hajmrle Declaration).

Moreover, the bentonite contemplated for use by Dorfman '182 is a species of calcined siliceous clay (see column 2, lines 47 to 50), and the calcined form of bentonite is not suitable for use as a binder due to the fact that the calcined form of bentonite is non-dispersible in water. During calcination of bentonite (ie. raw, uncalcined bentonite), chemically bound water from raw bentonite escapes from the raw bentonite to form calcined bentonite. The structure of the calcined bentonite is different from the structure of the raw bentonite. The raw bentonite is in the form of fine platelets which can coat the surface of solid lubricant particles when introduced into an aqueous slurry of the solid lubricant particles. During calcination, the platelets sinter together to form a mass of particles which can no longer be dispersed in water. (see attached Hajmrle Declaration).

Since Dorfman '182 does not disclose using bentonite as a binder, the Applicant submits that Claim 57 is patentable over the cited references.

With respect to Claims 62, 64-66, and 70, since each one of these claims is directly or indirectly dependent on Claim 57, and relying on the foregoing reasons with respect to Claim 44, the Applicant further submits that Claims 62, 64-66, and 70 are patentable over the cited references.

(d) Rejection of Claims 72, 74, and 75

Claim 72 depends on any one of Claims 27-52 and 54-71.

The Applicant has submitted, above, that Claim 27 is patentable over the cited references. Claims 28-43 and 70 are directly or indirectly dependent on Claim 27. As such, and relying on the foregoing reasons with respect to Claim 27, the Applicant further submits that Claims 28-43 and 70 are patentable over the cited references.

The Applicant has also submitted, above, that Claim 44 is patentable over the cited references. Claims 45-52, 54-56, and 71 are directly or indirectly dependent on Claim 44. As such, and relying on the foregoing reasons with respect to Claim 44, the Applicant further submits that Claims 45-52, 54-56, and 71 are patentable over the cited references.

The Applicant has also submitted, above, that Claim 57 is patentable over the cited references. Claims 58-69 are directly or indirectly dependent on Claim 57. As such, and relying on the foregoing reasons with respect to Claim 57, the Applicant further submits that Claims 58-69 are patentable over the cited references.

In summary, the Applicant has now submitted that Claims 27-52 and 54-71 are patentable over the cited references. As stated above, Claim 72 depends on any one of Claims 27-52 and 54-56. As such, and relying on the foregoing reasons, the Applicant further submits that Claim 72 is patentable over the cited references.

With respect to Claims 74 and 75, each one of these claims is directly or indirectly dependent on Claim 72. As such, and relying on the foregoing reasons with respect to Claim 72, the Applicant further submits that Claims 74 and 75 are patentable over the cited references.

4. Rejection of Claims 32, 33, 35, 36, 48-52, 64, and 65 under 35 U.S.C. 103

(a) Claims 32, 33, 35, and 36

Claims 32, 33, 35, and 36 are directly or indirectly dependent on Claim 27. The Applicant has submitted, above, that Claim 27 is patentable. As such, and relying on the foregoing reasons with respect to Claim 27, the Applicant further submits that Claims 32, 33, 35, and 36 are patentable over the cited references.

(b) Claims 48-52

Claims 48-52 are directly or indirectly dependent on Claim 44. The Applicant has submitted, above, that Claim 44 is patentable. As such, and relying on the foregoing reasons with respect to Claim 44, the Applicant further submits that Claims 48-52 are patentable over the cited references.

(c) Claims 64 and 65

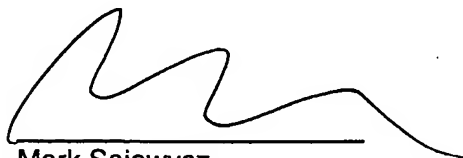
Claims 64 and 65 are directly or indirectly dependent on Claim 57. The Applicant has submitted, above, that Claim 57 is patentable. As such, and relying on the foregoing reasons with respect to Claim 57, the Applicant further submits that Claims 64 and 65 are patentable over the cited references.

5. Statement of the Substance of the Interview, Pertaining to Interview of April 10, 2008

On April 10, 2008, a telephonic interview was conducted between Examiner Amy Lang and the Applicant's agent, Mark Sajewycz. Agreement with respect to the claims was not reached. The Examiner clarified the 112 rejection and explained her position as to why the declaration filed on September 9, 2007 did not sufficiently provide evidence that the binders described in the cited references were non-dispersible.

The Applicant respectfully requests favourable consideration, and an early Notice of Allowability. The Examiner is invited to contact Applicant's undersigned attorney at his office in Toronto at (416) 862-5795 to resolve any remaining issues.

Respectfully submitted,
Hajmrle, et al.

A handwritten signature in black ink, appearing to read 'Mark Sajewycz', written over a horizontal line.

Mark Sajewycz
Registration No. 52,525
Gowling Lafleur Henderson LLP
Suite 1600, 1 First Canadian
Place, 100 King Street West
Toronto, Ontario
Canada M5X 1G5
(416) 862-7525

TOR_LAW\ 6917906\1